



ICAR – NATIONAL BUREAU OF AGRICULTURAL INSECT RESOURCES

(Indian Council of Agricultural Research)

Bengaluru, Karnataka

THREE-DAY NATIONAL TRAINING PROGRAMME

Emerging Trends in Insect Forecasting Models: From Prediction to Decision Support Systems for Precision Integrated Pest Management (IPM)

About the Programme

Precise forecasting of insect pest outbreaks is central to timely, cost-effective and environmentally sound pest management. This three-day national training programme presents the latest advances in insect forecasting from classical degree-day and regression approaches to modern machine-learning, climate-change impact modelling and AI-driven decision support.

Participants will gain hands-on exposure to time-series forecasting (AR, ARIMA, ARIMAX and machine learning), species distribution and CLIMEX-based risk modelling, thermal requirement estimation linked to crop-loss prediction, and emerging digital tools such as IoT-based monitoring, drones, GIS and remote sensing for real-time pest surveillance, culminating in the design of integrated decision support systems for precision Integrated Pest Management (IPM).

Duration	3 Days • 15 Expert Lectures • 3 Hands-on Practical Sessions
Resource Persons	Scientists from ICAR-NBAIR, ICAR-ATARI, ICAR-CICR, ICAR-NCIPM, ICAR-IIHR, ICAR-RCER and ICAR-CTCRI
Dates & Venue	December 2-4, 2026, ICAR-NBAIR, Bengaluru

Programme Highlights



Forecasting Models

Regression, time-series (AR/ARIMA/ARIMAX) and machine-learning approaches for pest prediction



Weather, GIS & Remote Sensing

Weather-based forecasting, species distribution modelling and CLIMEX risk assessment



Climate Change & Risk Projection

Modelling future pest risk and yield-loss impacts under changing climate scenarios



AI-Based Decision Support

Digital agriculture, economic thresholds and AI-driven decision support for IPM



IoT & Real-Time Monitoring

Smart pest monitoring, real-time data acquisition and early-warning systems



Hands-on Practicals

Applied sessions on forecasting models, thermal requirements and drone-based pest surveillance

Resource Persons

The programme features scientists and subject-matter experts drawn from across the ICAR system.

Eligibility

The training programme is intended for postgraduate and Ph.D. students pursuing research in Entomology, Agricultural Entomology, Plant Protection, Agricultural Sciences, Climate Science, Ecology, Environmental Science, Data Science and related disciplines. Preference may be given to students whose research involves insect pest dynamics, climate change, pest forecasting, ecological modelling, GIS, remote sensing, artificial intelligence, or integrated pest management (IPM). Students from agricultural universities, ICAR institutes, universities, research institutions and other recognized academic organizations are eligible to participate. Basic familiarity with computers, statistics, and research methodology will be desirable for effective participation in the hands-on practical sessions.

Programme Fee:

The training programme is proposed to be conducted **free of cost** for eligible postgraduate and Ph.D. students. The programme will include expert lectures, hands-on practical sessions, training materials, and a participation certificate. Accommodation and travel expenses, if applicable, will have to be borne by the participants/their respective institutions.

How to Apply:

Interested postgraduate and Ph.D. students may apply by submitting the following details through the application form:

1. Name of the applicant:
2. Gender:
3. Date of birth/age:
4. Name of the university/institute:
5. Department and programme (M.Sc./M.Tech. /Ph.D., etc.) :
6. Research area/topic:
7. Name and designation of research supervisor:
8. Email ID and mobile number:
9. Present address:
10. A brief statement of interest in the training programme (100–150 words):

Duly filled applications forwarded by the competent authority (Major advisor/ Head of the Division) should be sent by email to the Training Directors, Dr. Gundappa (gundu6100@gmail.com/ Dr. M. Sujithra amitysuji@gmail.com)

Applications will be screened based on eligibility, relevance of the applicant's research area to the training theme, and availability of seats. Selected participants will be informed by email.

Last date for receipt of the Nomination: November 15, 2026

Training organizing team:

Organizing chairman:

Dr. T. Venkatesan

Director

ICAR–National Bureau of Agricultural Insect Resources (ICAR-NBAIR), Bengaluru

Course Director

Dr. K. Subaharan

Head and Principal Scientist

Division of Germplasm Conservation and Utilization

ICAR–National Bureau of Agricultural Insect Resources (ICAR-NBAIR), Bengaluru

Course Coordinators:

Dr. Gundappa B.

Senior Scientist

ICAR–National Bureau of Agricultural Insect Resources (ICAR-NBAIR), Bengaluru

Dr. M. Sujithra

Senior Scientist

ICAR–National Bureau of Agricultural Insect Resources (ICAR-NBAIR), Bengaluru

Training Co-Coordinators:

Dr. T. Prabhulinga

Senior Scientist

ICAR–National Bureau of Agricultural Insect Resources (ICAR-NBAIR), Bengaluru

Dr. B. S. Gotyal

Principal Scientist

ICAR–National Bureau of Agricultural Insect Resources (ICAR-NBAIR), Bengaluru

Contact

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